

## REMARKS

The applicants respectfully request that the Examiner telephone the undersigned attorney of record if the Examiner believes that the above Amendment in light of the following remarks does not place the case in condition for allowance.

The applicants note with appreciation the indication that the Examiner has allowed claims 1-10. Claim 24 which had been objected to has been rewritten in independent form and believed allowable as not presented.

The Examiner has rejected the remainder of the claims. Because of the number of rejections, the applicants will address each rejection in the order set out by the Examiner in the Office Action of June 27, 2005.

The Examiner has rejected claims 11-12, and 17 as being anticipated by Potter. In light of the present amendment to claim 11, the applicants respectfully traverse the Examiner's rejection. Potter sets forth a fiber optic diffuser having an optical fiber 10 with a flat tip 15 and a sleeve 18 with a head portion 19. As seen in Figs 2A – 2C, and described at Col. 5, lines 15-21, the head portion can be tapered “to facilitate insertion of the fiber diffuser assembly through [an] endoscope and into a tumor.” As amended, claim 11 requires that the probe comprise a “continuous optical fiber having a first portion of substantially constant diameter and a tip formed as a substantially uniform cone having a conical face angled at  $45^{\circ} \pm 2^{\circ}$  relative to a longitudinal axis...” Clearly,

the optical fiber in Potter terminates in a flat section, and the conical portion which is attached for the purpose of cutting into a tumor is not the tip portion of a continuous fiber. Because the arrangement of Potter does not meet the limitations of claim 11, and because Potter is arranged for a different purpose, and works in a different way and will obtain different results, it is respectfully submitted that Potter neither anticipates, nor renders obvious claim 11 or the claims dependent thereon.

The Examiner has rejected claim 18 as being anticipated by Hirschfeld in evidence of Wach et al. While an anticipation rejection using one reference “in evidence” of another is not understood, the applicants will address both references separately. First, with respect to Wach et al., the rejection has been rendered moot by the amendment of claim 18 to eliminate the paraboloid arrangement from the claim. Second, with respect to Hirschfeld, the applicants respectfully traverse the Examiner’s rejection. Claim 18 requires a **hemisphere**. A hemisphere is half of a sphere. As shown in the attached blown-up drawings, the hemisphere of the present application (Fig. 4a) is clearly half a sphere, as the entire circle in red is within the boundaries of the probe, and a diameter of the circle can be made by drawing a line across the inflection points from where the hemisphere ends and the remainder of the probe continues. This is in contrast to Fig. 9b of Hirschfeld as indicated by the red arrows and the filled in red areas showing space between the circle defined by the partially spherical tip end and the tip; and also by the difference in location in Hirschfeld between the chord defined by the inflection points where the partial sphere ends and the remainder of the probe continues and the diameter line. Given the fact that neither Hirschfeld, nor any of the art cited by the Examiner

shows or suggests the use of a hemispherical probe tip, claim 18 (and the claims dependent thereon) is clearly allowable.

Turning now to the obviousness rejections, the Examiner has reinstituted his rejection of claims 11-14 as being obvious over Mononobe, and in apologizing for reinstituting a rejection which was previously withdrawn states that he does not agree with the applicant's argument that Mononobe teaches away from a "substantially uniform cone" because claim 11 does not state that the substantially uniform cone does not preclude having multiple tapers or multiple conical bases at the distal end of the fiber. In response, the applicant has amended the claim to indicate that the probe has a first portion of substantially constant diameter and a tip, and the tip extends to the first portion and is formed as a substantially uniform cone having a conical face angled at  $45^{\circ} \pm 2^{\circ}$  relative to a longitudinal axis. Clearly, Mononobe neither teaches nor suggests such an arrangement, and in fact teaches away from such an arrangement. The tip portion of Mononobe if taken to be the very tip, does not have a conical face angled at the claimed angle and does not extend back to the portion of substantially constant diameter. On the other hand, if the tip portion of Mononobe is taken to be the entire tip portion, it does not have a substantially uniform cone. While stating that a substantially uniform cone does not preclude having multiple tapers or multiple conical bases at the distal end of the fiber, the Examiner cannot ignore the amended language of the claim which requires that the **tip** be a substantially uniform cone which extends back to the first substantially constant diameter portion of the fiber. The words "substantially uniform" when taken in conjunction with the remainder of the claim do preclude exactly what Mononobe shows

and teaches. Thus, claim 11 and the claims dependent thereon are allowable over the cited art.

While the Examiner's rejection of claims 15 and 16 as being obvious over Mononobe in view of Friedman should be moot in light of the comments above, the applicants wish to note that the rejection is not proper for an additional reason. Mononobe is directed to detecting evanescent light in a near-field microscope, while Friedman is directed to a dental fiber optic light guide bundle for producing a convergent beam of high-intensity light for curing a photocurable dental composition. Thus, one reference is for light detection, while the other is for producing a beam. Clearly, the two references are not related other than the fact that they both incorporate an optical fiber. In making a hypothesis of incentive ("to minimize light loss and optimize light convergence") the Examiner has substituted a *post facto* analysis instead of looking to the teachings of the references. The "light loss" of Mononobe relates to avoiding loss in detection, and not in generating a beam. Thus, clearly the Examiner has misinterpreted the teaching of Mononobe in order to provide a hypothesis of incentive for combination and has improperly used hindsight in order to reconstruct the claimed invention.

Claim 17 has been rejected as being obvious over Mononobe et al. in view of Wu et al. Claim 17 is allowable as being dependent on claim 11 as discussed above.

Claim 20 has been rejected as being obvious over Hirschfeld in view of Wach et al. and MacDonald, and claim 21 has been rejected over that combination in further view

of Friedman. The Examiner essentially argues that Hirschfeld in evidence of Wach discloses a hemispherical tip. However, the applicants have already shown with reference to the anticipation rejection of claim 18 that Hirschfeld does not disclose or suggest a hemispherical tip. None of Wach, MacDonald, or Friedman show or suggest a hemispherical tip. Thus, claims 20 and 21 are allowable for the same reasons as claim 18.

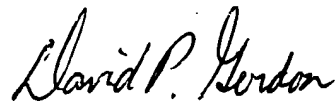
The Examiner has rejected claim 22 as being obvious of Sahagen and has provided a complex analysis which he believes supports this rejection. The undersigned attorney of record respectfully cannot understand the Examiner's analysis and has previously argued to the extent that he can comprehend what he believes is extremely stretched and incorrect reasoning as to why the rejection is not appropriate. Nonetheless, in order to expedite allowance of the case, claim 22 has been amended to recite the language of allowable claim 1, thereby (hopefully) rendering the Examiner's rejection of claim 22 moot.

The Examiner has rejected claim 23 as being obvious over Sahagen in view of Hirschfeld. The Examiner utilizes Hirschfeld for the proposition that hemispherical probe tips are known. The applicants respectfully traverse this rejection for the reasons set forth above with reference to claim 18; i.e., neither Sahagen nor Hirschfeld teach a hemispherical (or cubical corner) probe tip as claimed.

The Examiner has rejected claim 25 as obvious over Ramos in view of Allison et al. (5,812,729). The Examiner argues that Ramos teaches a tool having a plurality of optical probes coupled to an elongate body and a light source, and that Allison teaches that the numerical apertures of fibers are based on the angles such that the angles set forth in Ramos provide the numerical apertures as claimed. In response, the applicants have amended claim 25 to require that the first probe having a numerical aperture of below 0.3 is not in contact with a second probe having a numerical aperture of above 0.8. Fig. 2 of Ramos which is cited by the Examiner as teaching a plurality of optical probes actually describes only a single probe (Col. 16, lines 5-27). Figs. 5a and 5b which are likewise cited by the Examiner as teaching multiple probes describes probes which are contact with each other. Since Ramos et al. teaches away from having distinct probes which are not in contact with each other as presently claimed, it is respectfully submitted that claim 25 is allowable over the cited art.

In light of all of the above, it is submitted that the claims are in order for allowance, and prompt allowance is earnestly requested. Should any issues remain outstanding, the Examiner is again invited to call the undersigned attorney of record so that the case may proceed expeditiously to allowance.

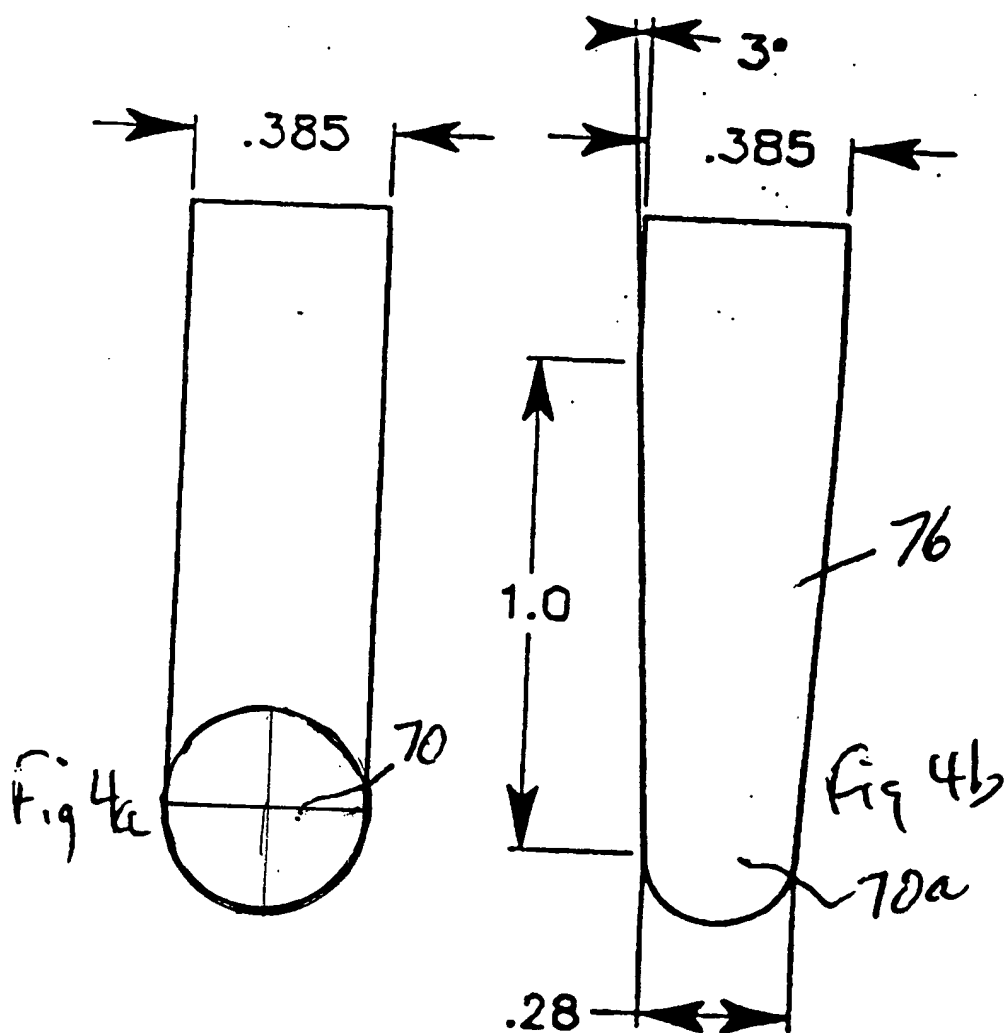
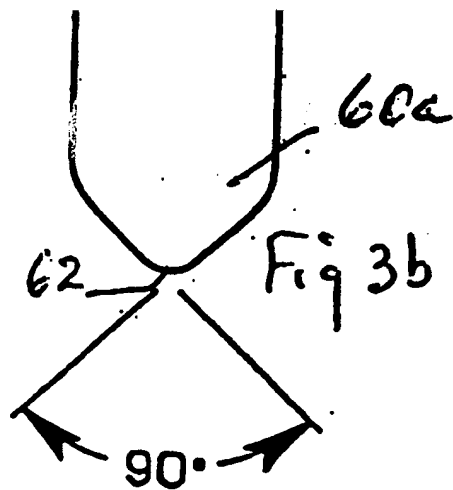
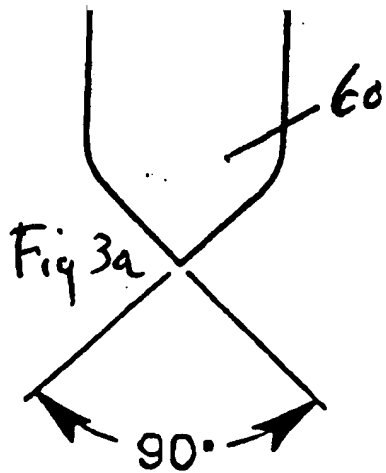
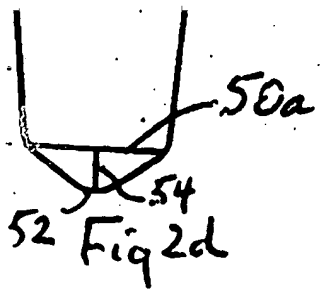
Respectfully submitted,

A handwritten signature in black ink that reads "David P. Gordon". The signature is written in a cursive, flowing style.

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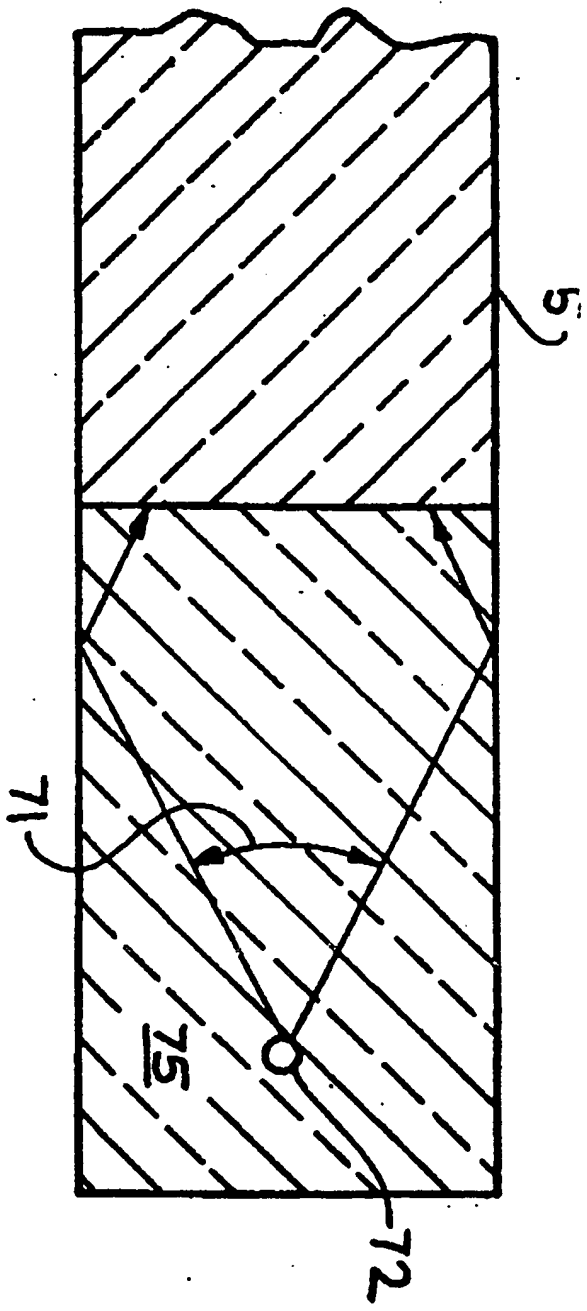


FIG. 9 (a)

